

Atty. Dkt. No. SALK2370-2  
(088802-5455)

**Amendments to the Claims/Listing of Claims**

Please amend claims 17, 23, and 26, and add new claims 40-56 as follows. In addition, please cancel Claims 1-16, 18-22, 24-25, and 27-39 without prejudice. This listing of claims will replace all prior versions, and listings, of claims in the application.

1. – 16. (Cancelled)

17. (Currently amended) A crystalline form of the ~~polyketide synthase of claim 1~~ **chalcone synthase having SEQ ID NO:1, wherein said crystalline form has space group P<sub>3</sub>2<sub>1</sub>, unit cell dimensions 97.54 Å, 97.54 Å, 65.52 Å, and unit cell angles 90°, 90°, 120°.**

18. – 22. (Cancelled)

23. (Currently amended) A crystalline complex comprising **said crystalline form of** chalcone synthase **according to Claim 17** and a chalcone synthase substrate.

24. – 25. (Cancelled)

26. (Currently amended) The crystalline complex of claim 23, wherein ~~the chalcone synthase~~ **said** substrate is selected from the group consisting of chalcone, naringenin, resveratrol, cerulenin, acyl-CoA, malonyl-CoA, and hexanoyl-CoA.

27. - 39. (Cancelled)

40. (New) A method for crystallizing chalcone synthase having SEQ ID NO:1 or mutant thereof,

wherein said mutant is selected from the group consisting of said chalcone synthase having one or more mutations selected from the group consisting of C<sub>164</sub>S, C<sub>164</sub>D, H<sub>303</sub>A, H<sub>303</sub>Q, H<sub>303</sub>D, H<sub>303</sub>T, N<sub>336</sub>A, N<sub>336</sub>D, N<sub>336</sub>Q, N<sub>336</sub>H, F<sub>215</sub>S, F<sub>215</sub>Y, and F<sub>215</sub>W,

wherein said method comprises growing crystals of said chalcone synthase or mutant thereof by vapor diffusion at 4 °C in 2 µL drops,

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wherein said drops contain a 1:1 mixture of 25 mg/mL of said chalcone synthase and crystallization buffer, and

wherein said crystallization buffer comprises 2.2-2.4 M ammonium sulfate and 0.1 M PIPES, pH 6.5.

41. (New) The method of Claim 40 further comprising 5 mM DTT.
42. (New) A crystal produced by the method of Claim 40.
43. (New) The crystal of Claim 42 where said chalcone synthase has SEQ ID NO:1.
44. (New) The crystal of Claim 42 wherein said mutation is C<sub>164</sub>S.
45. (New) The crystal of Claim 42 wherein said mutation is C<sub>164</sub>D.
46. (New) The crystal of Claim 42 wherein said mutation is H<sub>303</sub>A.
47. (New) The crystal of Claim 42 wherein said mutation is H<sub>303</sub>Q.
48. (New) The crystal of Claim 42 wherein said mutation is H<sub>303</sub>D.
49. (New) The crystal of Claim 42 wherein said mutation is H<sub>303</sub>T.
50. (New) The crystal of Claim 42 wherein said mutation is N<sub>336</sub>A.
51. (New) The crystal of Claim 42 wherein said mutation is N<sub>336</sub>D.
52. (New) The crystal of Claim 42 wherein said mutation is N<sub>336</sub>Q.
53. (New) The crystal of Claim 42 wherein said mutation is N<sub>336</sub>H.
54. (New) The crystal of Claim 42 wherein said mutation is F<sub>215</sub>S.
55. (New) The crystal of Claim 42 wherein said mutation is F<sub>215</sub>Y.

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56. (New) The crystal of Claim 42 wherein said mutation is F<sub>215</sub>W.